

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently amended) A method of forming a semiconductor structure comprising:
 - etching through a nitride layer;
 - etching through an oxide layer; and
 - etching a semiconductor substrate; wherein:
 - a last portion of the nitride layer is etched with a nitride etching chemistry comprising a fluorinated hydrocarbon, oxygen, and an inert gas selected from the group consisting of neon, argon, krypton, xenon, and combinations thereof;
 - a last portion of the oxide layer is etched with an oxide etching chemistry that is different from the nitride etching chemistry, and the oxide etching chemistry comprises CF₄ and CHF₃; and
 - the nitride layer is on the oxide layer, and the oxide layer is on the semiconductor substrate.
2. (Original) The method of claim 1 wherein an antireflective coating is on the nitride layer, and wherein the method further comprises etching the antireflective coating using the nitride etching chemistry.
3. (Currently amended) The method of claim 1 further comprising overetching the nitride layer using the nitride etching chemistry by up to and including ten percent-of ~~the nitride end point~~.
4. (Original) The method of claim 1 wherein the fluorinated hydrocarbon is selected from the group consisting of CF₄, CHF₃, CH₂F₂, CH₃F, and combinations thereof.

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5. (Original) The method of claim 1 wherein the oxide etching chemistry comprises a fluorinated hydrocarbon selected from the group consisting of CF₄, CHF₃, CH₂F₂, CH₃F, and combinations thereof.

6. (Original) The method of claim 5 wherein the semiconductor substrate comprises silicon, and wherein the etching of the semiconductor substrate is achieved with a silicon etching chemistry comprising a reagent selected from the group consisting of a halogen gas, a hydrogen halide, oxygen, and combinations thereof.

7. (Canceled)

8. (Original) The method of claim 7 wherein a ratio of CF₄ flow rate to CHF₃ flow rate ranges from one to one up to and including one to six.

9. (Original) The method of claim 6 wherein the silicon etching chemistry comprises Cl₂, HBr, and O₂.

10. (Original) The method of claim 1 wherein the nitride etching chemistry comprises CF₄, CHF₃, Ar, and O₂.

11. (Original) The method of claim 10 wherein a ratio of CF₄ flow rate to CHF₃ flow rate varies from six to one down to and including one to one.

12. (Original) The method of claim 1 wherein the nitride etching chemistry is introduced with a bias of at least -50 V.

13. (Original) The method of claim 1 wherein a ratio of pressure:top power:bias of the nitride etching chemistry is 1-50 mTorr: 100-750 W: -50 - -500 V.

14. (Original) The method of claim 10 wherein a ratio of pressure:top power:bias of the nitride etching chemistry is 1-50 mTorr: 100-750 W: -50 - -500 V.

15. (Original) The method of claim 7 wherein a ratio of CF₄ flow rate:CHF₃ flow rate is 1-500 sccm:5-500 sccm.

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16. (Original) The method of claim 6 further comprising cleaning the semiconductor substrate with a silicon cleaning chemistry comprising a fluorinated hydrocarbon and an inert gas selected from the group consisting of neon, argon, krypton, xenon, and combinations thereof.

17. (Original) The method of claim 6 further comprising cleaning the semiconductor substrate using a silicon cleaning chemistry comprising CF₄ and argon.

18. (Currently amended) The method of claim 236 wherein the silicon cleaning chemistry is introduced with a bias of at least -50 V.

19. (Currently amended) A method of forming a semiconductor structure comprising:

etching through a nitride layer;

etching through an oxide layer; and

etching a semiconductor substrate, which comprises silicon; wherein:

a last portion of the nitride layer is etched with a nitride etching chemistry comprising CF₄, CHF₃, Ar, and O₂;

a last portion of the oxide layer is etched with an oxide etching chemistry that is different from the nitride etching chemistry, and the oxide etching chemistry comprises comprising-CF₄ and CHF₃;

the semiconductor substrate is etched with a silicon etching chemistry comprising Cl₂, HBr, and O₂; and

the nitride layer is on the oxide layer, and the oxide layer is on the semiconductor substrate.

20. (Original) A method of making a semiconductor device comprising:

making a semiconductor structure by the method of claim 1; and
forming a semiconductor device from the structure.

21. (Original) A method of making an electronic device comprising:

making a semiconductor device by the method of claim 20; and
forming an electronic device, which comprises the semiconductor device.

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22. (Original) A method of making a semiconductor device comprising:
making a semiconductor structure by the method of claim 19;
and
forming a semiconductor device from the structure.
23. (Original) A method of making an electronic device comprising:
making a semiconductor device by the method of claim 22; and
forming an electronic device, which comprises the semiconductor device.
- 24 - 30. (Canceled)
31. (New) A method of forming a semiconductor structure comprising:
etching through a nitride layer;
etching through an oxide layer;
etching a semiconductor substrate; wherein:
a last portion of the nitride layer is etched with a nitride etching chemistry comprising a fluorinated hydrocarbon, oxygen, and an inert gas selected from the group consisting of neon, argon, krypton, xenon, and combinations thereof;
a last portion of the oxide layer is etched with an oxide etching chemistry that is different from the nitride etching chemistry; and
the nitride layer is on the oxide layer, and the oxide layer is on the semiconductor substrate; and
overetching the nitride layer using the nitride etching chemistry by up to and including ten percent.
32. (New) The method of claim 31 wherein an antireflective coating is on the nitride layer, and wherein the method further comprises etching the antireflective coating using the nitride etching chemistry.
33. (New) The method of claim 31 wherein the fluorinated hydrocarbon is selected from the group consisting of CF₄, CHF₃, CH₂F₂, CH₃F, and combinations thereof.

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34. (New) The method of claim 31 wherein the oxide etching chemistry comprises a fluorinated hydrocarbon selected from the group consisting of CF₄, CHF₃, CH₂F₂, CH₃F, and combinations thereof.

35. (New) The method of claim 34 wherein the semiconductor substrate comprises silicon, and wherein the etching of the semiconductor substrate is achieved with a silicon etching chemistry comprising a reagent selected from the group consisting of a halogen gas, a hydrogen halide, oxygen, and combinations thereof.

36. (New) The method of claim 31, wherein the oxide etching chemistry comprises CF₄ and CHF₃.

37. (New) The method of claim 36 wherein a ratio of CF₄ flow rate to CHF₃ flow rate ranges from one to one up to and including one to six.

38. (New) The method of claim 35 wherein the silicon etching chemistry comprises Cl₂, HBr, and O₂.